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TQB8E0454_

Welcome to the Panasonic family of customers.

We hope that you will have many years of enjoyment from your new colour television set.



This TV set is designed to operate at 240v 50Hz A.C.



This TV set is designed to receive broadcast systems in the U.K. only, it will not receive broadcast systems in other countries.



To prevent damage which might result in electric shock or fire, do not expose this TV set to rain or excessive moisture.



WARNING: HIGH VOLTAGE!!!

Do not remove the rear cover as live parts are accessible when it is removed. There are no user serviceable parts inside.



Remove the mains plug from the wall socket when the TV set is not used for a prolonged period of time. Especially when retiring at night.



CABINET AND PICTURE TUBE CARE

Remove the mains plug from the wall socket. The cabinet and picture tube can be kept in good condition by simply wiping with a clean, soft cloth moistened with mild detergent and water. Do not use solutions containing benzol or petroleum.



Adequate ventilation is essential to prevent failure of electrical components.



Avoid exposing the TV set to direct sunlight and other sources of heat.

IMPORTANT

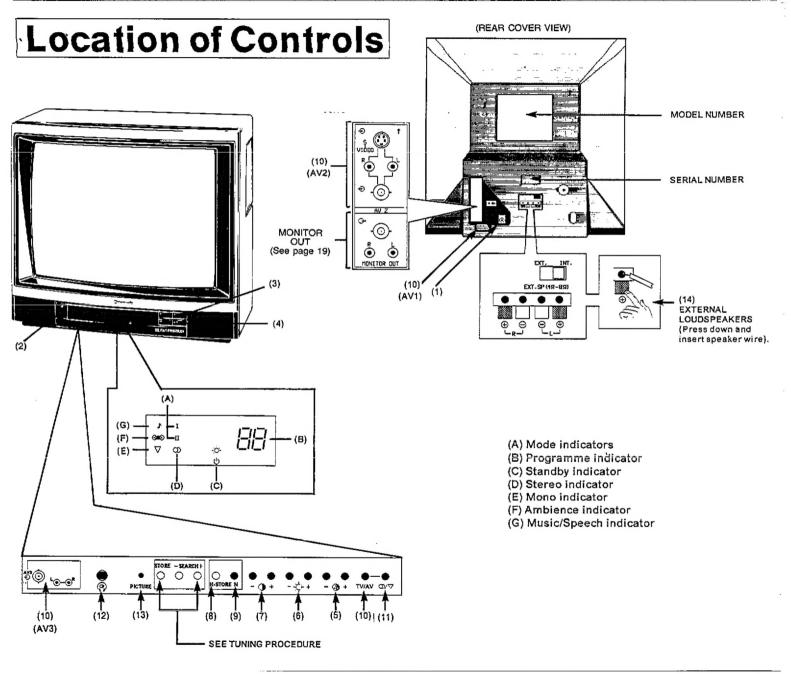
The wires in this mains lead are coloured in accordance with the following code:

BLUE: NEUTRAL

BROWN: LIVE

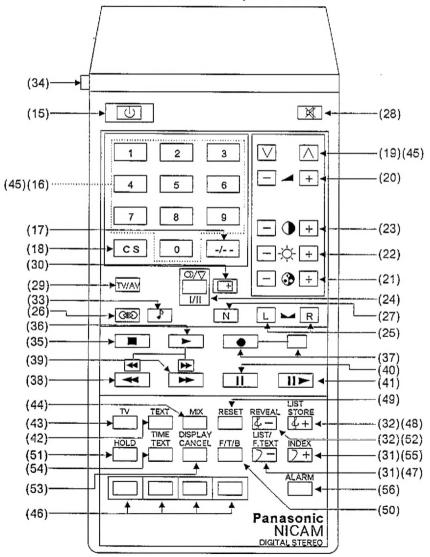
As the colours of the wires in this mains lead may not correspond to the markings identifying the terminals in your plug, proceed as follows:

- 1. The BLUE wire must be connected to the terminal marked 'N' or coloured black.
- 2. The BROWN wire must be connected to the terminal marked 'L' or coloured red.



Remote Control Transmitter

Part No. TNQ8E0423

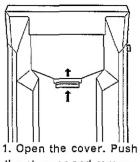


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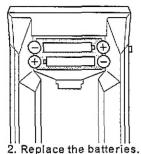
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BATTERY INSTALLATION & REPLACEMENT (Remote Control Transmitter)

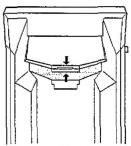
Batteries: Use two 'R03' (UM-4) dry cells (supplied).



1. Open the cover. Push the stopper and remove the cover.



Insert the batteries correctly as indicated by the (+) and (-) symbols.



3. Replace the cover.

BATTERY PRECAUTIONS

The incorrect use of batteries can cause electrolyte leakage which will corrode the transmitter.

The following precautions must be observed carefully.

- 1. Do not use an old battery with a new one.
- 2. Do not use batteries other than the type supplied.
- 3. Ensure the batteries are inserted correctly.
- 4. Do not attempt to recharge the batteries.
- 5. Do not mix battery types (alkaline with carbon zinc etc.).
- 6. Do not use rechargeable (Ni-Cd) batteries. They are partially different in shape and performance and may not ensure the desired function.

PROGRAMME POSITIONS

NOTE: There are 50 programme positions available i.e. 50 positions on which to store different channels. Programme positions can be selected in a number of ways (see below).

- 1. Using the PROGRAMME UP/DOWN buttons on the TV or remote control.
- 2. Using buttons 0-9 on the remote control.
- 3. To select double figure programme positions, using the remote control, press the '-/--' button and then enter the programme number using buttons 0-9.

When using a VCR, ensure to use programme position '0' as this is specially adapted for VCR use.

TUNING PROCEDURE

METHOD 1.

Select a programme position (1-50), using the programme up/down buttons on the TV or remote control.



Press the SEARCH up or down buttons until the desired channel is received.



Press the **STORE** button to store this channel in the TV's memory.

STORE

Repeat this procedure, using different programme positions to store other channels.

METHOD 2.

(if channel numbers are known) Select a programme position (1-50). Press the button marked "CS" on the remote control. The display will now show "--".

Enter the desired channel number, e.g. to receive channel 51, push buttons '5' and '1' consecutively.

Press the STORE button to store this channel in the TV's memory.

Repeat this procedure, using different programme positions to store other channels.

Consult your dealer about the channel numbers for your area.

OPERATION OF TV CONTROLS

The numbers on these pages refer to the numbers on the LOCATION OF CONTROLS and REMOTE CONTROL TRANSMITTER pages.

(1) AERIAL CONNECTION

Connect the aerial lead to the socket marked 'Tr' at the rear of the TV.

(2) POWER SWITCH

Push to switch the TV on, push again to switch off.

(3) PROGRAMME UP/DOWN

Press once to increase or decrease the programme position by one.

(4) VOLUME UP/DOWN

Press the '+' button to increase the sound level. Press the '-' button to decrease the sound level.

(5) COLOUR UP/DOWN

Press the '+' button to increase the colour level. Press the '-' button to decrease the colour level.

(6) BRIGHTNESS UP/DOWN

Press the '+' button to increase the brightness level. Press the '-' button to decrease the brightness level.

(7) CONTRAST UP/DOWN

Press the '+' button to increase the contrast level. Press the '-' button to decrease the contrast level.

(8) NORMALISATION STORE

Adjust the volume, brightness, colour, and contrast to normal viewing levels. Press this button to store these levels in the TV memory.

(9) NORMALISATION

If levels of volume, brightness, colour and contrast have been altered, they can be set back to their stored levels, by pressing this button.

(10) TV/AV SELECTION

Terminals are available at the front and rear of the T.V. for direct audio/video inputs or outputs. To select these terminals, press the 'TV/AV' button, this selects AV1, press again to select AV2, press again to select AV3, press again to return to T.V. mode.

NOTE: AV2 has a connection for VCR's equipped with Super VHS. To use this facility; ensure that the S-VHS SELECT switch (on the VCR) is in the ON position (refer to VCR operating instructions for full details).

(11) A.V. STEREO/MONO SELECTION

Press this button to select A.V. stereo or mono operation. The function indicator on the T.V. will light to show which mode is selected. This button operates in A.V. mode only.

' \bigcirc ' = STEREO. ' \bigcirc ' = MONO.

(12) HEADPHONE SOCKET

A standard 6mm stereo headphone socket is available for the connection of a pair of 8-300 Ohm impedance headphones. The TV speakers will be automatically disconnected while the headphones are connected.

(13) PICTURE CONTROL

Turn left or right for a softer or sharper picture.

(14) EXTERNAL LOUDSPEAKERS

External loudspeaker terminals are provided at the rear of the T.V. for the connection of a pair of Hi-Fi loudspeakers of 4-8 Ohm impedance. The speakers are switchable from internal to external by means of a slide switch situated above the terminals. To select external speakers, move the switch to the EXT. position. The internal speakers will be disconnected when external speakers are selected.

REMOTE CONTROL OPERATION FOR TV

(15) STANDBY

Press this button to switch the TV off for short periods. Press again to switch on, or select a programme position from 0-9.

(16) PROG./CHANNEL/PAGE SELECTION Press these buttons to select pro-

gramme positions, channel numbers or teletext pages.

(17) PROGRAMME POSITION 10 - 50

To select double figure programme positions (10-50) press this button and then enter the programme position number using buttons 0-9.

(18) DIRECT CHANNEL SELECTION

Press this button, the display will now show'--'. Now enter the channel number, using buttons 0-9 on the keyboard. To select channel number 51, press buttons '5' and '1' consecutively.

NOTE: The channel number indication changes back to the previously selected programme position number.

(19) PROGRAMME UP/DOWN

Press once to increase or decrease the programme position by one.

(20) VOLUME UP/DOWN

Press the '+' button to increase the sound level. Press the '-' button to decrease the sound level.

(21) COLOUR UP/DOWN

Press the '+' button to increase the colour level. Press the '-' button to decrease the colour level.

(22) BRIGHTNESS UP/DOWN

Press the '+' button to increase the brightness level. Press the '-' button to decrease the brightness level.

(23) CONTRAST UP/DOWN

Press the '+' button to increase the contrast level. Press the '-' button to decrease the contrast level.

(24) STEREO/MONO SELECTION

The NICAM system is a ground-based TV service for digital stereo sound developed by the BBC.

To receive NICAM broadcasts, this TV set incorporates a NICAM decoder.

When a stereo, dual-soundtrack or monaural NICAM broadcast is received the mode indicators (see location of controls), will light to inform you of the type of broadcast received.

The NICAM programmes are always accompanied by standard broadcasts and you can select the desired sound-track by pressing the ' \bigcirc / \bigcirc / \bigcirc I/II' button on the remote control.

Reference table for Received signal, Selection mode, Indication and Audio out.

SWITCHED			SOUND OUT	
RECEIVING MODE SIGNAL		INDICATION	SPEAKER & HEADPHONE	
		L-CH	R-CH	
FM SIGNAL FM	PCM 1	NO INDICATION	FM	FM
	FM	NO INDICATION	FM	FM
PCM STEREO SIGNAL FM	STEREO	0	L	R
	\forall	FM	FM	
PCM 1 MONO	I	I	I	I
	FM	∇	FM	FM
MONO I +	I	I	I	I
	II	II	II	II
	I + II	I	I	II
	FM	∇	FM	FM

INDEPENDENT SWITCHING OPERATION OF RECEIVED SIGNAL. To carry out mode switching operation, use 'I/II' key of the remote control unit. The sound will change with each press of this button.

RECEIVING SIGNAL	SWITCHING OPERATION
FM ONLY	FMFM
PCM STEREO	PCM STEREO-FM
PCM 1 Mono	PCM I FM
PCM 2 Mono	PCM I

Note:

- When the power is set ON, the mode is pre-set at 'PCM I /PCM STEREO'.
- Even when the contents of the receiving signal undergo changes, selected mode is maintained.
- 3. When the receiving conditions deteriorate, listening will be easier if the FM mode is set at 'MONO' position.

(25) BALANCE

Press the 'R' button to bias the sound to the right. Press the 'L' button to bias the sound to the left.

(26) AMBIENCE

Ambience sound is a dynamic sound system that gives a feeling of greater acoustic presence. Press this button to obtain better acoustic sound from the speakers.

(27) NORMALISATION

If levels of volume, brightness, colour and contrast have been altered, they can be set back to their stored levels, by pressing this button.

(28) SOUND MUTE

Press this button to mute the sound. To restore the sound, perform any one of the following:

- (a) Press the sound mute button again.
- (b) Press the STANDBY button to set the TV in the standby condition, then press again.
- (c) Press the VOLUME up or down buttons.
- (d) Press the PROGRAMME up or down buttons.

(29) TV/AV SELECTION

Terminals are available at the front and rear of the T.V. for direct audio/video inputs or outputs. To select these terminals, press the 'TV/AV' button, this selects AV1, press again to select AV2, press again to select AV3, press again to return to T.V. mode.

NOTE: AV2 has a connection for VCR's equipped with Super VHS. To use this facility; ensure that the S-VHS SELECT switch (on the VCR) is in the ON position (refer to VCR operating instructions for full details).

(30) STATUS

Press this button, the screen will now show the programme position at the top left, the time at the top right and the name of the teletext if transmitted. If the Panasonic alarm has been set, then the time remaining will be shown in place of the teletext name. The channel number will be displayed on the programme indicator.

(31) BASS UP/DOWN

Press the (+) button to increase the bass level. Press the (-) button to decrease the bass level.

(32) TREBLE UP/DOWN

Press the (+) button to increase the treble level. Press the (-) button to decrease the treble level.

(33) MUSIC/SPEECH

Press this button to select music or speech sound settings.

REMOTE CONTROL OPERATION FOR VCR

This infra-red remote control is designed specifically to be used with selected Panasonic VCR's, consultyour dealer for details.

Some VCR's have different functions, so to ensure compatibility, please refer to the VCR instruction book or consult your dealer.

NOTE: The VCR functions will not operate unless the VCR SELECT button is pressed in conjunction with the desired VCR function.

E.g. To select STOP, press the VCR SELECT button with the STOP button.

When using a VCR, ensure to use programme position '0' as this is specially adapted for VCR use.

(34) VCR SELECT

Press and hold this button while using the following functions.

(35) STOP

Press this button to stop the tape.

(36) PLAY

Press this button to playback the tape.

(37) RECORD

Press these buttons together to record.

(38) REWIND/REVIEW

Press this button to rewind the tape. In playback mode, press this button to view the picture in reverse rapidly.

(39) FAST FORWARD/CUE

Press this button to fast forward the tape. In playback mode, press this button to view the picture rapidly forward.

(40) PAUSE/STILL

Press this button in playback mode, the picture will stop.

(41) STILL ADVANCE

While in the PAUSE/STILL mode press this button to advance the picture one frame at a time.

TELETEXT OPERATION

(42) TEXT

Press this button to change from TV to TELETEXT mode.

NOTE: Teletext information is only available if the channel selected is transmitting teletext.

(43) TV

Press this button to change back to TV mode.

NOTE: Pressing the 'N' button will also change back to TV mode.

(44) MIX

Press this button to superimpose **TELETEXT** pictures onto the **TV** display.

NOTE: Unless the sound is muted, it will be present in TEXT, TV or MIX modes.

To exit this mode press TV, TEXT or 'N' buttons.

(45) PAGE SELECTION

Pages can be selected in two ways:

- (a) By entering the page number directly, using buttons 0-9 on the remote control.
- (b) By using the 'VA' buttons on the remote control to increase or decrease the page number by one.

(46) RED/GREEN/YELLOW/BLUE buttons
These four buttons are colourcoded to correspond to the differently coloured subjects in
'FASTEXT' mode. In 'LIST STORE'
mode they correspond to the differently coloured page numbers.

(47) LIST/F.TEXT

Press this button to change from FASTEXT mode to LIST STORE mode and vice versa. In FASTEXT mode, four differently coloured subjects are situated at the bottom of the display. To access more information about one of these subjects, press the appropriately coloured button.

This facility enables fast access to information of the subjects shown.

NOTE: These subjects are determined by the broadcasting authorities and cannot be changed by the customer.

(48) LIST STORE

In this mode, four differently coloured page numbers are situated at the bottom of the screen, each of these numbers can be altered and stored in the TV memory. To do this, press any one of the coloured buttons on the remote control, this will select the number to be changed. Then enter the new page number to be stored, using buttons 0-9 on the remote control.

NOTE: When first switching to LIST STORE mode, the page number coloured RED will be automatically selected. Press and hold the LIST STORE button until the page numbers change to WHITE indicating that the number is now stored in the TV memory.

NOTE: All four page numbers will be stored at the same time. This facility enables the customer to store four different page numbers on 10 programme positions. This means that up to forty teletext page numbers can be stored in the TV memory. These pages will remain in the memory, even when switching off. If there is no page number matching the entered number then the number selected will keep flashing.

(49) RESET

Pressing this button in the FASTEXT mode will reset the present page, back to the index page. Pressing this button in the LIST STORE mode resets the present page to the RED coloured page number.

(50) TOP/BOTTOM/FULL

Press this button to expand the TOP half of the display. Press again to expand the BOTTOM half of the display. Press again to return the display to normal size.

(51) HOLD

When teletext information exceeds more than one page, the display changes automatically to the next page. To hold a particular page, press this button. The page number at the top left of the screen changes to 'HOLD'. This display will remain until the HOLD button is pressed again and the page number is restored.

(52) REVEAL

Press this button to reveal hidden words e.g. quiz pages with hidden answers. Press again to hide the word.

(53) DISPLAY CANCEL

While searching for a teletext page, the TV display can be viewed by pressing this button. When the page has been found, the found symbol will be displayed.

(54) TIME TEXT

This function is used for selected pages only e.g. The teletext alarm page. Refer to the main teletext index. Select the teletext ALARM PAGE. Press the TIME TEXT button. Txx:xx will be displayed on the screen, now enter the time at which this alarm page should be displayed, using buttons 0-9 on the remote control. E.g. for 3.30 pm, press buttons 1,5,3,0 consecutively (this feature uses a 24 hour clock) Press the DISPLAY CANCEL button to view TV.

Then at 3.30pm the alarm page will be displayed.

To cancel this feature, press the RESET button any time.

(55) INDEX

Press this button in FASTEXT mode to return to the index page. This button may need to be pressed more than once, due to the way information is transmitted.

(56) PANASONIC ALARM

This function can be used in TV or TELETEXT modes.

E.g. To set this alarm for two hours ahead.

- (a) Press the ALARM button.
- (b) Using buttons 0-9 on the remote control, press 0,2,0,0 consecutively.

The screen will show a normal TV display until after two hours when the PANASONIC ALARM page will be displayed.

NOTE: To check how much time is left until the alarm page is displayed, press the STATUS button. To cancel this feature press the ALARM button again and press the RESET button.

GENERAL INFORMATION

SLEEP FEATURE

If the set is not switched off when the TV station stops transmitting at the end of the evening. It will automatically go to standby mode after 30 minutes.

SERVICE

To obtain service please contact your local Panasonic dealer, and quote the model number and serial number (both are located at the rear of the TV).

TV GAMES / HOME COMPUTERS

Extended use of TV games or home computers with any television set can cause a permanent 'shadow' on the screen. This type of irreversible picture tube damage, can be limited by observing the following points:

- (a) Reduce the brightness and contrast levels to a minimum viewing level.
- (b) Do not operate the television set for a continuous period of time while using TV games or home computers.
- (c) Ensure the TV is off when not in actual use.

This type of picture tube damage, is not an operating defect, and as such is not covered by the Panasonic warranty.

TROUBLE SHOOTING

Before calling for service, make a few simple checks as follows:

SYMPTOMS	CHECKS
No picture No sound	Not plugged into A.C. supply. Not switched on. Check contrast, brightness and volume settings.
Normal picture No sound	Check volume level. Check sound mute button on remote control.
No colour Normal sound	Check colour level.
Interference on screen Distorted sound	Electrical appliances, cars, motorcycles, fluorescent lights.
Multiple image. Snowy picture. Distorted sound. Characters missing in teletext mode.	Direction, location and/or aerial connection.
Remote control mal- functions or reduction in operating distance.	Replace batteries. Clean indicator window. Check battery terminals.

SPECIFICATIONS

Power source

Power consumption

141 W.

240V 50Hz AC.

Receiving system

CCIR: 625 lines PALI.

Tuning system

Frequency synthesised.

Picture tube

59cm V FST.

Speakers

2 12cm round.

2 9cm x 5cm oval. 2 x 10W.

Audio output Terminals

Aerial.

External loudspeaker.

Headphone.

AV1 - 21 pin terminal video/audio in/out.

AV2 - BNC video in.

- RCA audio in.

- S-Video in.

AV3 - BNC video in.

RCA audio in.

Monitor Out - BNC video out.

RCA audio out.

Dimensions

(H) 549mm. (W) 594mm.

(D) 448.5mm.

Weight

33kg.

Accessories:

1 remote control (TNQ8E0423)

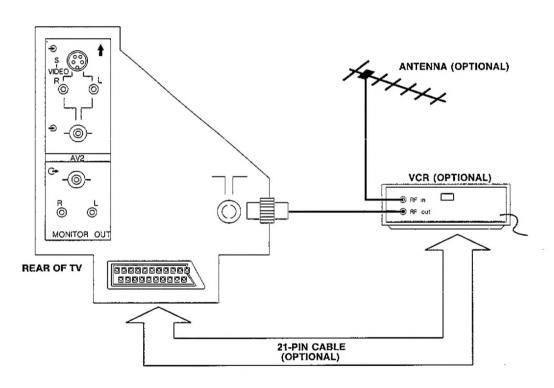
2 RO3 size batteries.

1 Set stand (TS2422)

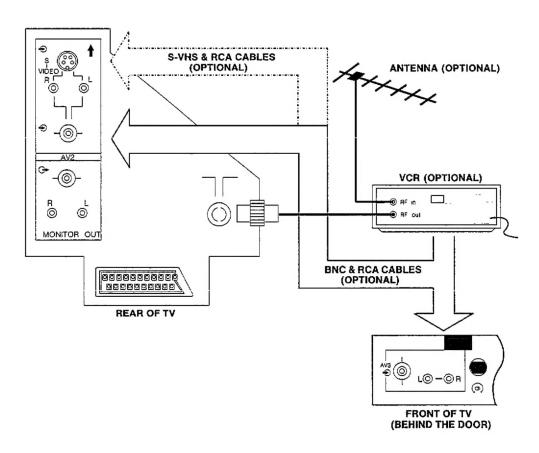
NOTE:

Specifications are subject to change without notice. Weight and dimensions shown are approximate.

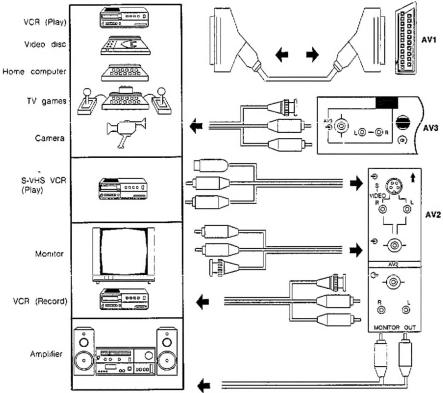
CONNECTION OF VCR WITH THE 21-PIN TERMINAL



CONNECTION OF VCR WITHOUT THE 21-PIN TERMINAL



AUDIO VIDEO CONNECTIONS



Consult your dealer for suitable cables.

When using AV terminals, follow these precautions:

- 1. Do not connect a computer with a TTL output (5V) to any terminal on this set.
- 2. Never connect the same VCR to an input $(\textcircled{\oplus})$ and an output $(\textcircled{\oplus})$ on this TV set with the aerial connected, this may cause malfunction and will damage the VCR and the TV. NOTE: The MONITOR OUT terminals contain signals which are shown on the TV screen at that time, i.e. TV programmes or signals from AV1, AV2 or AV3 inputs.
- ⊕ This symbol indicates INPUT only. → This symbol indicates OUTPUT only.
- This symbol indicates INPUT and OUTPUT.